Claims:

1. Arrangement for the continuous manufacture of reinforced hose-shaped structures (1) having:

a conveying unit for continuously advancing a row of sequentially coupled cylindrical mandrels (5) in a conveying direction (X) and for returning individual mandrels (5) to the manufacturing start;

at least one extrusion unit (4) for applying a rubber or plastic layer to the periphery of the mandrels (5);

at least one unit (9) for applying at least one reinforcement layer (3);

a separating device (13) for cutting the reinforced hose-shaped structures (1) at the connecting locations of mutually adjoining mandrels (5);

and a strip-off unit (14) for stripping off the cut reinforced hose-shaped structures (1) from the individual mandrels (5);

characterized in that:

the mandrels (5) are rigid, the mandrels (5) are so coupled to each other that, in each case, a peripherally-extending cutting zone (S) is provided from a material, which is different from that of the mandrel (5), between the abutting surfaces of mutually adjoining mandrels (5); and, that the unit is so aligned that a vulcanization of the reinforced hose-shaped structures (1) takes place after the strip off.

2. Arrangement of claim 1, characterized by a separating means application unit (18) for applying separating means to the periphery of the mandrels (5); the separating means application

unit (18) being mounted ahead of the first extrusion unit (4a) as seen in the conveying direction.

3. Arrangement of claim 1 or 2, characterized by a cutting device (15) for cutting the stripped-off, reinforced, hose-shaped structures (1) to defined vulcanization lengths; the cutting device (15) being mounted in the manufacturing process ahead of a vulcanization unit.

4. Arrangement of claim 3, characterized in that the cutting unit (15) has a cutting head (16) which is moveable transversely to the longitudinal axis of the reinforced hose-shaped structure (1) and relative thereto.

5. Arrangement of one of the above claims, characterized in that the extrusion units (4), in each case, include a gear pump (8) for conveying the extruded rubber or plastic to an extrusion head.

6. Arrangement of one of the above claims, characterized by at least one measuring unit (7) for continuously measuring the advancing speed of the mandrels (5) and a control unit (11) for controlling the quantity, which is supplied for applying a rubber or plastic layer (2), and for controlling the rotational speed of the bobbin creel unit (9) in dependence upon the advancing speed in such a manner that a constant thickness of at least the first rubber or plastic layer (2a) and a defined angle of the at least one filament layer of the reinforcement layers (3) is formed.

7. Arrangement of one of the above claims, characterized by at

least one measuring device (7) for continuously measuring the thickness of the first rubber or plastic layer (2a), which is applied directly to the mandrel (5), and a control unit (11) for controlling the rotational speed of the bobbin creel of the downstream bobbin creel unit (9) in dependence upon the measured thickness of the first rubber or plastic layer (2a).

8. Arrangement of one of the above claims, characterized by process variable measurement means for measuring process variables when applying the rubber or plastic layers (2) and reinforcement layers (3) and a fault marking unit (10) for applying markings to the reinforced hose-shaped structures (1) when the measured process variables exceed or drop below a particular fault tolerance amount.

9. Arrangement of one of the above claims, characterized in that the mandrels (5) have a length in the range of between one and eight meters, preferably between two and four meters.

10. Arrangement of one of the above claims, characterized by mandrel adapters for lengthening the standard length of the mandrels (5); the mandrel adapters abutting virtually seamlessly against an assigned mandrel (5) and being coupled tightly to the mandrel (5); and, the mandrel adapters having a coupling element for coupling the mandrel adapter to an additional mandrel (5) with a peripherally-extending cut zone (S) of a material, which is different from that of the mandrel (5), between the abutting surfaces to an adjoining mandrel (5).

11. Method for the continuous manufacture of reinforced

hose-shaped structures (1) having the steps of:

(a) applying rubber or plastic layers (2) and reinforcement layers (3) in composite to the periphery of a row of cylindrical rigid mandrels (5), which are coupled sequentially to each other, and are continuously driven in a conveying direction (X);

characterized by:

(b) cutting the reinforced hose-shaped structures (1) at the connecting locations of mutually adjoining mandrels (5); the mandrels (5) being coupled to each other in such a manner that, in each case, a peripherally-extending cutting zone (S) of a material, which is different than that of the mandrel (5), is provided between the abutting surfaces of mutually adjoining mandrels (5);

(c) separating the mutually coupled mandrels (5) from each other;

(d) stripping off the reinforced hose-shaped structures (1) from the mandrels (5);

(e) returning the mandrels (5) for forming the row of mandrels (5) in step (a);

(f) vulcanizing the stripped-off reinforced hose-shaped structures (1) or parts thereof.

12. Method of claim 11, characterized by applying separating means in advance of applying a first rubber or plastic layer (2a) to the mandrels (5) in step (a).

13. Method of claim 11 or 12, characterized by cutting the stripped-off reinforced hose-shaped structures (1) to defined vulcanization lengths in advance of the vulcanization in step (f).

14. Method of one of the claims 11 to 13, characterized by extruding rubber or plastic layers (2), in each case, to the periphery of the cylindrical mandrels (5) and onto the reinforcement layers (3).

15. Method of claim 14, characterized by volume-dependently controlling the thickness of the rubber or plastic layers (2) by means of a gear pump (8) which is mounted between the extruder and the extrusion head of an extrusion unit (4).

16. Method of one of the claims 11 to 15, characterized by spiraling on cords with a rotating bobbin creel for applying a reinforcement layer (3).

17. Method of one of the claims 11 to 16, characterized by continuously measuring the advancing speed of the mandrels (5) and controlling the rubber or plastic quantities, which are supplied for the application of a rubber or plastic layer (2), and controlling the application of the reinforcement layer (3) in dependence upon the advancing speed in such a manner that a constant thickness of the rubber of plastic layers (2) and a defined reinforcement layer (3) is formed.

18. Method of claim 17, characterized by continuously measuring the thickness of the first rubber or plastic layer (2a), which is applied directly to the mandrel (5), and controlling the application of the reinforcement layer (3) in dependence upon the measured thickness of the rubber or plastic layer (2a).

19. Method of one of the claims 12 to 18, characterized by measuring process variables during the application of the rubber or plastic layers (2) and reinforcement layers (3); marking of defective areas of the structures (1) when the process variables exceed or drop below a particular fault tolerance amount; optical detection of the marked defective areas and separating out the sections of the reinforced hose-shaped structures, which have been detected as defective, after the strip off of the reinforced hose-shaped structure (1).